

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/059844 A2

(51) International Patent Classification⁷: **H03L**

(21) International Application Number: **PCT/IB2003/006444**

(22) International Filing Date:
19 December 2003 (19.12.2003)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
0230289.1 30 December 2002 (30.12.2002) GB

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

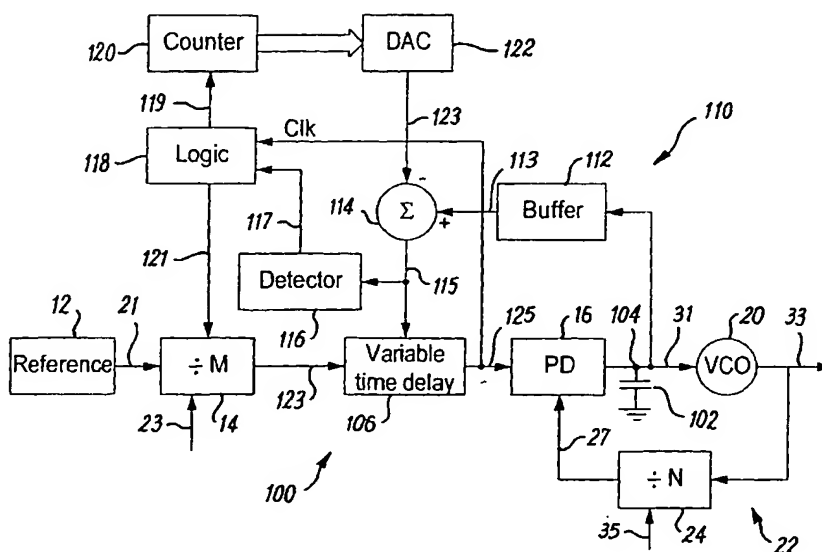
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPROVED PHASE LOCKED LOOP



(57) **Abstract:** A phase locked loop circuit, for providing an oscillating output signal at an output frequency, comprising: a reference counter; a loop counter; a phase detector having a first input coupled to the reference counter and second input coupled to the loop counter; a voltage controlled oscillator having an input coupled to the output of the phase detector and an output for providing the oscillating output signal; a feedback loop coupling the output of the voltage controlled oscillator to the input of the loop counter; and delay circuitry, including a feedback loop, arranged to introduce a discrete delay into the output of the loop counter and/or the reference counter.

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